



## Chapter Five AIRPORT PLANS

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# Airport Plans

The planning process for the Chino Airport master plan has included several analytic efforts in the previous chapters intended to project potential aviation demand, establish airside and landside facility needs, and evaluate options for improving the airport to meet those airside and landside facility needs. The planning process, thus far, has included the presentation of two draft phase reports (representing the first four chapters of the master plan) to the planning advisory committee (PAC) and San Bernardino County. A plan for the use of Chino Airport has evolved considering their input. The purpose of this chapter is to describe, in narrative and graphic form, the plan for the future use of Chino Airport.

### *AIRFIELD PLAN*

The airfield plan for Chino Airport focuses on meeting design and safety

standards for each runway, improving instrument approach capability, extending Runway 8L-26R, and the development of new taxiways over time to improve airfield capacity, safety, and efficiency. **Exhibit 5A** graphically depicts the proposed airfield improvements. The following text summarizes the elements of the airfield plan.

### *AIRFIELD DESIGN STANDARDS*

As a federally-obligated airport (the result of accepting federal grant funding), Chino Airport must comply with Federal Aviation Administration (FAA) design and safety standards. The FAA has established these design criteria to define the physical dimensions of runways and taxiways and the imaginary surfaces surrounding them that protect the safe operation of aircraft at the airport. FAA design standards also define the separation



criteria for the placement of landside facilities. As discussed previously in Chapter Three, FAA design criteria is a function of the critical design aircraft's (the most demanding aircraft or "family" of aircraft which will conduct 500 or more operations [take-offs and landings] per year at the airport) wingspan and approach speed, and in some cases, the runway approach visibility minimums. The FAA has established the Airport Reference Code (ARC) to relate these factors to airfield design standards.

Chino Airport is used by a wide range of general aviation aircraft and helicopters. General aviation aircraft include single and multi-engine aircraft within ARCs A-I and B-I, turboprop aircraft within ARCs B-I and B-II, and business jet aircraft within ARCs C-I, C-II, D-I, and D-II. Helicopters are not assigned an ARC. In the future, it is expected that aircraft through ARC D-III would use the airport.

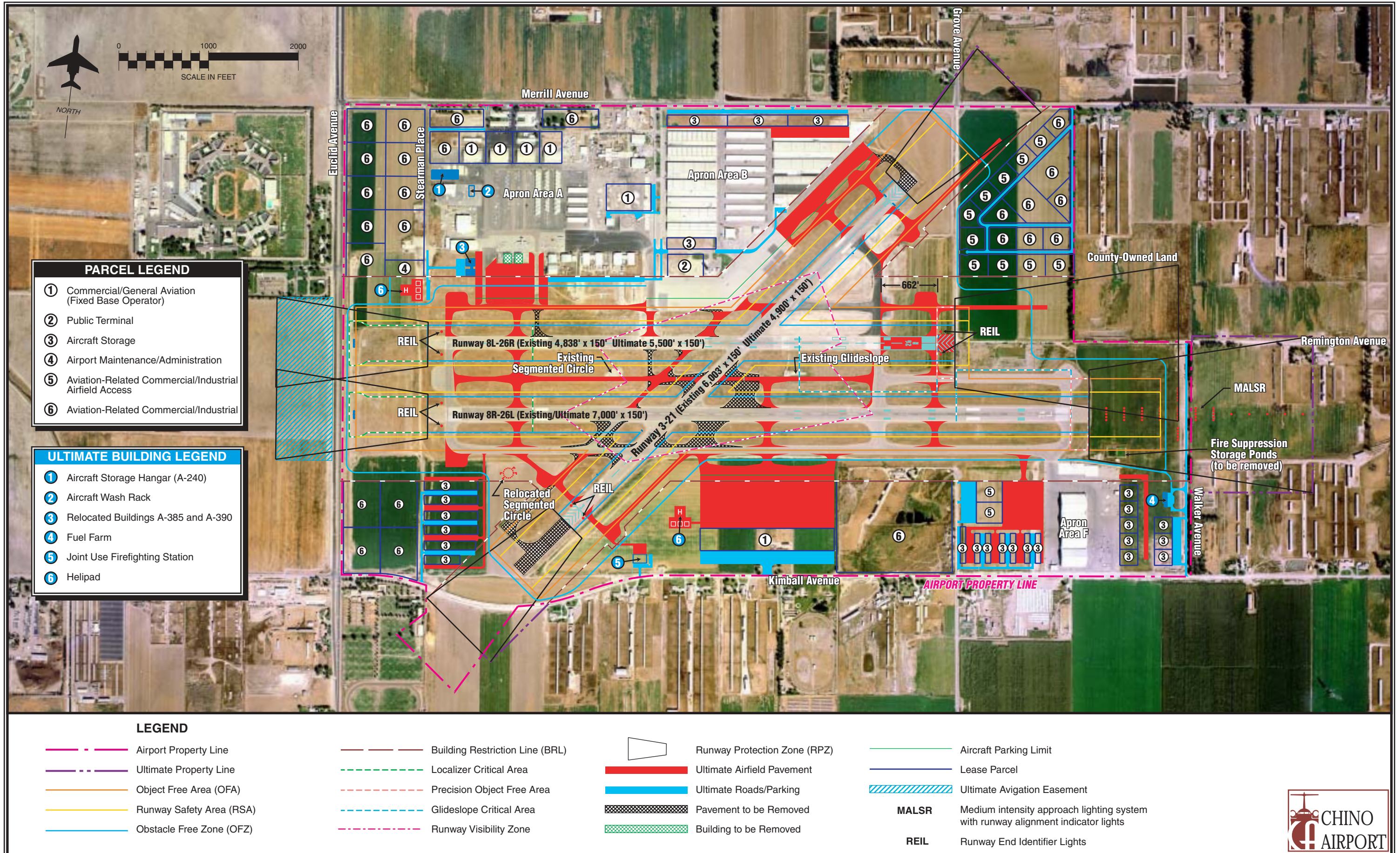
Considering the potential type of aircraft that could use Chino Airport, an ARC has been assigned for each runway and used in the development of the ultimate airfield plan. As the longest runway at the airport, Runway 8R-26L can serve the needs of all the aircraft expected to use the airport. For this reason, Runway 8R-26L is planned for the most demanding ARC D-III standards. As a capacity enhancement to primary Runway 8R-26L, Runway 8L-26R can serve a less demanding role and can consequently be planned to a lesser design standard. Therefore, Runway 8L-26R is planned for aircraft

through ARC C-II. Runway 3-21 is planned for ARC C-II as well. Runway 3-21 is preferred by many pilots when the winds are strong from the northeast; however, the crosswind components of the largest aircraft that may use Chino Airport allow for these aircraft to continue to use Runway 8R-26L even when the winds favor using Runway 3-21.

The design of taxiway and apron areas should consider the wingspan requirements of the most demanding aircraft to operate within the specific area. The parallel taxiways, connecting taxiways, and itinerant aprons are planned to accommodate aircraft within airplane design group (ADG) III. T-hangar areas are planned to accommodate aircraft within ADG I. **Table 5A** summarizes the planned airfield safety and facility dimensions for Chino Airport.

A review of runway safety area (RSA) and object free area (OFA) standards indicates that these standards are not fully met behind the Runway 3, Runway 21, Runway 8L, Runway 26R, or Runway 26L ends. For Runway 8L, the RSA and OFA are obstructed by the existing localizer antenna. The RSA and OFA extend approximately 858 feet behind the runway end (142 feet short of standard). For the Runway 26R end, the RSA does not meet grading standards and is obstructed by a series of natural gas valves that protrude above the ground. At the Runway 26R end, two fire suppression storage tanks extend into the OFA.







**TABLE 5A**  
**Planned Airfield Safety and Facility Dimensions (in feet)**

|  | <b>Runway<br/>8R-26L</b>   |       | <b>Runway<br/>8L-26R</b> |       | <b>Runway<br/>3-21</b> |
|--|--|-------|--------------------------|-------|------------------------|
| <b>Airport Reference Code (ARC)</b>        | D-III  |       | C-II                     |       | C-II                   |
| <b>Approach Visibility Minimums</b>        | ½ Mile   |       | One-Mile                 |       | Visual                 |
| <b><u>Runway</u></b>                       |  |       |                          |       |                        |
| Width                                      | 150  |       | 150                      |       | 150                    |
| Runway Safety Area (RSA)                   |  |       |                          |       |                        |
| Width                                      | 500  |       | 400                      |       | 400                    |
| Length Beyond Runway End                   | 1,000  |       | 1,000                    |       | 1,000                  |
| Object Free Area (OFA)                     |  |       |                          |       |                        |
| Width                                      | 800  |       | 800                      |       | 800                    |
| Length Beyond Runway End                   | 1,000  |       | 1,000                    |       | 1,000                  |
| Obstacle Free Zone (OFZ)                   |  |       |                          |       |                        |
| Width                                      | 400  |       | 400                      |       | 400                    |
| Length Beyond Runway End                   | 200  |       | 200                      |       | 200                    |
| Precision Object Free Area (POFA)          |  |       |                          |       |                        |
| Width                                      | 800  |       | N/A                      |       | N/A                    |
| Length Beyond Runway End                   | 200  |       | N/A                      |       | N/A                    |
| Runway Centerline To:                      |  |       |                          |       |                        |
| Hold Line                                  | 250  |       | 250                      |       | 250                    |
| Parallel Taxiway Centerline                | 400  |       | 400                      |       | 400                    |
| Edge of Aircraft Parking Apron             | 500  |       | 400                      |       | 400                    |
| <b><u>Runway Protection Zone (RPZ)</u></b> | 8R   | 26L   | 8L                       | 26R   | 500<br>1,010<br>1,700  |
|  | 500  | 1,000 | 500                      | 1,000 |                        |
|  | 1,010  | 1,700 | 1,010                    | 1,700 |                        |
|  | 1,700  | 2,500 | 1,700                    | 2,500 |                        |
|  |  |       |                          |       |                        |
| <b><u>Obstacle Clearance</u></b>           | 20:1   | 50:1  | 20:1                     | 50:1  | 20:1                   |
| <b><u>Taxiways</u></b>                     |  |       |                          |       |                        |
| Width                                      | 50   |       |                          |       |                        |
| Safety Area Width                          | 118  |       |                          |       |                        |
| Object Free Area Width                     | 186  |       |                          |       |                        |
| Taxiway Centerline To:                     |  |       |                          |       |                        |
| Parallel Taxiway/Taxilane                  | 152  |       |                          |       |                        |
| <b><u>Taxilanes</u></b>                    |  |       |                          |       |                        |
| Taxilane Centerline To:                    |  |       |                          |       |                        |
| Parallel Taxilane Centerline               | 140  |       |                          |       |                        |
| Fixed or Moveable Object                   | 81   |       |                          |       |                        |
| Taxilane Object Free Area                  | 162  |       |                          |       |                        |
| Source:                                    | FAA Advisory Circular (AC) 150/5300-13, <i>Airport Design</i> , Change 7; FAR Part 77, <i>Objects Affecting Navigable Airspace</i> |       |                          |       |                        |

The RSA and OFA behind the Runway 3 end extend beyond airport property and is obstructed by Kimball Avenue. The RSA extends 486 feet behind the Runway 3 end, while the OFA extends

350 feet behind the Runway 3 end. The RSA and OFA behind the Runway 21 end also extend beyond airport property and are obstructed by Merrill Avenue. The RSA extends 780 feet behind the

Runway 21 end, while the OFA extends 627 feet behind the Runway 21 end.

Compliance with RSA standards is a current focus of FAA policy. Guidance for compliance with RSA standards is provided in FAA Order 5200.8, *Runway Safety Area Program*. The objective of the runway safety area program is that all RSAs at federally-obligated airports conform to the standards contained in AC 150/5300-13, *Airport Design*, to the extent practicable. FAA Order 5300.1F, *Modification of Agency Airport Design, Construction, and Equipment Standards* indicates that modifications of standards are **not** issued for nonstandard runway safety areas.

To conform with FAA guidance and the intent of FAA Order 5200.8, a plan to meet the full RSA and OFA standards at each runway end has been developed. For Runway 8L, this involves relocating the localizer 142 feet west, beyond the limits of the RSA and OFA. At the Runway 26R end, the RSA is to be graded to standard and the natural gas valves relocated. At the Runway 26R end, the fire suppression tanks are planned to be removed.

Compliance with RSA and OFA standards for Runway 3-21 will involve the relocation of the Runway 3 and Runway 21 ends in an effort to locate the RSA and OFA on existing airport property. The relocation involves abandoning the pavement behind the relocated runway ends. This effectively reduces the overall runway length.

The Runway 3 landing threshold is planned to be relocated approximately 750 feet northeast. This will allow for

the full RSA and OFA to be located behind the Runway 3 end and allow for the planned perimeter service road to be located outside the OFA. The Runway 21 threshold is planned to be relocated approximately 353 feet to the southwest. This will also allow for the full RSA and OFA to be located behind the Runway 3 end and allow for the planned perimeter service road to be located outside the OFA. New taxiways are planned to be developed to the new runway ends. Following the relocations, Runway 3-21 will be 4,900 feet long and 150 feet wide (62 feet longer than the current length of Runway 8L-26R). Relocating the Runway 3 and Runway 21 ends will require the relocation of the visual approach slope indicators (VASI) installed at the Runway 3 and Runway 21 ends, the existing threshold lighting, and the Runway 21 runway end identifier lights (REILs).

Runway 8L-26R is planned to be extended 662 feet east for an ultimate length of 5,500 feet. As detailed in Chapter Three, this extension would bring Runway 8L-26R to the length recommended by the FAA for aircraft in ARC C-II. The primary benefit of this extension is that a greater number of aircraft would be able to land and depart on this runway than the current runway length allows. This increases airfield capacity by allowing for more simultaneous landing and departing operations. Extending Runway 26R to the east will require the relocation of the Runway 26R glideslope antenna, visual approach slope indicator (VASI), and existing automated surface observation system (ASOS).

A Category I (CAT I) instrument landing system (ILS) approach is planned for Chino Airport. A CAT I ILS approach provides for landings when visibility is as low as ½ mile and cloud ceilings are as low as 200 feet above the ground. The existing ILS approach provides for landings when visibility is as low as ¾ mile and cloud ceilings are 200 feet above the ground. The lower visibility minimums will be achieved with the installation of a medium intensity approach lighting system with runway alignment indicator lighting (MALSR).

The existing ILS is installed to Runway 26R. The recommended master plan concept provides for the relocation of the ILS to the Runway 26L end to position the ILS with the primary (and longest) runway at the airport. The existing ILS equipment is owned and operated by the FAA. The FAA would need to approve the relocation of the equipment. Funding for the relocation would need to be established and the FAA would need to complete an airport airspace analysis for the new approach to Runway 26L prior to the relocation. Land acquisition would be necessary to accommodate the MALSR system and protect the Runway 26R runway protection zone (RPZ).

While planning for the relocation of the ILS to the Runway 26L end, the master plan anticipates the potential that the CAT I ILS would need to remain on Runway 26R. Without an existing approach to Runway 26L, there exists a potential that an airport airspace analysis would find that a CAT I approach could not be established to the Runway 26L end, or the necessary

equipment relocations could not be accomplished. Therefore, the Airport Airspace Plan (Appendix B) protects the airspace to both Runway 26R and Runway 26L for an ultimate CAT I ILS approach, although it is acknowledged that only one of these runway ends would ultimately be equipped with this level of approach capability. The runway end not equipped with the CAT I ILS is planned for an approach procedure with vertical guidance and visibility minimums of one mile and cloud ceiling minimums of 300 feet.

The existing and ultimate runway protection zone (RPZ) for each runway end extends beyond the existing airport property line. The FAA recommends that an airport sponsor have positive control over the RPZ to ensure that incompatible development and/or obstructions are not developed within the RPZ area. The recommended master plan concept includes acquiring the land encompassed by the ultimate Runway 3, Runway 21, and Runway 26L RPZs fee simple, prior to this land being converted to alternate uses. The portion of the Runway 8L and 8R RPZs that extend over the state-owned land to the west are planned to be protected with an aviation easement. This allows this land to continue to be owned and controlled by the state, while providing Chino Airport an assurance that this area would not be developed with incompatible land uses.

Taxiway improvements include both the development of new taxiways and a new taxiway identification plan. The new identification plan and new taxiways are shown on **Exhibit 5B**. The new identification plan anticipates the need

to identify the planned taxiways in the future.

The new identification plan retains the existing Taxiway C and Taxiway D designations. Taxiway N is changed to Taxiway A and Taxiway L is changed to Taxiway B. Taxiway K is changed to Taxiway E. Taxiway G is changed to Taxiway H. Taxiway B is changed to Taxiway D3. Taxiways J and F are changed to Taxiways C1 and C2, respectively. The remainder of this master plan will refer to the new taxiway designations for clarity.

The planned taxiway improvements include closing existing Taxiway B (future Taxiway D3) between Runway 8L-26R and Taxiway C. This is to reduce the number of decision points at its intersection with Taxiway B (formerly Taxiway L) and Taxiway C. This is intended to reduce the potential for runway incursions.

Taxiways AA and A are planned to become apron taxilanes. Taxiway F is planned to be extended between Apron Area A and the Runway 3 end.

The existing portions of Taxiway M extending to the north and south of Runway 8R-26L are planned to be removed as a full-length parallel taxiway southeast of Runway 3-21 is no longer planned. These taxiways are planned to be replaced by a new exit taxiway (Taxiway G) which is located at the midpoint of Runway 8R-26L.

Taxiway M is ultimately planned to comprise two partial parallel taxiway segments at each end of Runway 3-21. The northeast portion of Taxiway M is

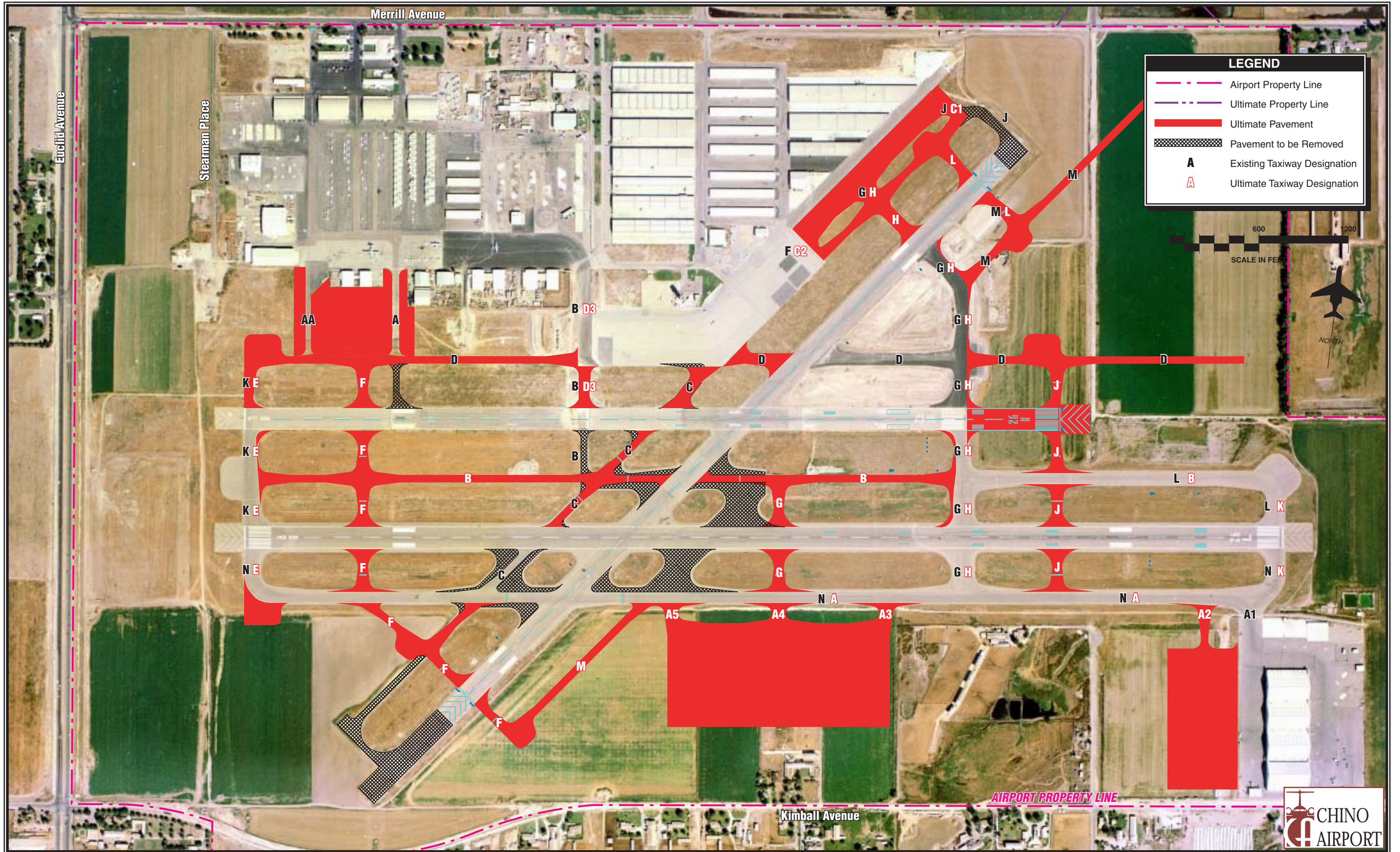
planned to extend between Taxiway H and the Runway 21 end. The southeast portion of Taxiway M is planned to extend between Taxiway A and the Runway 3 end.

Taxiway B (center parallel taxiway) is planned to extend the full length of Runway 8R-26L. Taxiway B facilitates the movement of aircraft between Apron Areas A and B and Runway 8R-26L. Essentially, this taxiway is planned to reduce the number of aircraft which must taxi along Taxiway D and the potential number of runway crossings. Without Taxiway B, aircraft bound for the Runway 26R end must taxi via Taxiway D and cross Runway 8L-26R at Taxiway H (formerly Taxiway G), or cross both parallel runways and taxi to the Runway 26R end via Taxiway A (formerly Taxiway N). With Taxiway B, aircraft can taxi to the Runway 26R end after crossing Runway 8L-26R at either Taxiway E or Taxiway F. This reduces the potential congestion at Taxiway H as aircraft departing Runway 26R could block aircraft destined for the Runway 26L end. The development of Taxiway B will require the relocation of the existing Runway 26R glideslope and segmented circle and lighted windcone. The segmented circle and lighted wind cone are planned to be relocated south of Taxiway A, west of Runway 3-21.

Taxiways G and J are planned exit taxiways. These taxiways will allow landing aircraft more exit options and the ability to exit the runway more quickly after landing.

New holding aprons are planned for the Runway 8R, Runway 3, and Runway 21







ends. Holding aprons provide an area for aircraft to prepare for departure off the active taxiway and allow aircraft ready for departure to by-pass those aircraft preparing for departure.

Runway end identification lights (REILs) are planned for the Runway 8L, Runway 8R, and Runway 3 ends. REILs assist pilots in locating the runway end at night and during low visibility conditions. As discussed previously, the CAT I ILS could be installed at either the Runway 26R or Runway 26L end. REILs are planned for the runway end not ultimately equipped with the CAT I ILS approach and MALSR. **Exhibit 5A** depicts these on Runway 26R.

The Runway 26L markings are planned to be upgraded to precision markings in anticipation of the ILS being relocated to this runway end.

A perimeter service road is included in the airfield plan for the airport. This roadway is intended to extend around the entire airfield operations area and provide a year-round roadway for use by airport maintenance, security, aircraft refueling vehicles, and firefighting vehicles. This enhances airfield safety by allowing airport vehicles to access portions of the airport without crossing active runways and taxiways.

## ***LANDSIDE PLAN***

The landside plan for Chino Airport has been devised to safely, securely, and efficiently accommodate potential aviation demand and provide revenue enhancement possibilities by designating the use of certain portions of

airport property for aviation-related commercial and industrial uses, including land uses with a need for airfield access. The landside plan provides for the development of new commercial general aviation facilities, aircraft storage facilities, an airport maintenance/administration facility, an aircraft wash rack, a public terminal building, consolidated fuel farm, helipads, aviation-related commercial land uses, and segregated vehicle access routes.

With the exception of the public terminal building and aircraft wash rack, most structural improvements are anticipated to be developed privately, as has been done in the past at Chino Airport. The master plan identifies the use of certain parcels of land. Separate planning studies will identify building development standards, a conceptual landscape plan, and architectural design standards for the development of these parcels of land. The capital improvement program identifies the infrastructure improvements needed at the airport to support development and the federal and state funding assistance available to San Bernardino County to make those improvements.

The implementation of the *Aviation and Transportation Security Act* of 2001 will need to be closely monitored throughout the implementation of this master plan. This law established the Transportation Security Administration (TSA) to administer transportation security nationally. While the focus of the TSA in 2002 was commercial airline checked baggage and carry-on baggage screening, a component of the TSA

security plan will be general aviation airports.

As of October 2002, there was no formal rulemaking for general aviation airport security. However, industry groups had made a series of recommendations to the TSA for general aviation threat assessment and security standards for general aviation airports (summarized in Chapter Four). This master plan has anticipated that greater security scrutiny will be placed on general aviation airports in the future, especially those general aviation airports serving aircraft greater than 12,500 pounds. The TSA has already implemented security provisions for air charter operations with aircraft over 12,500 pounds. For Chino Airport, these security enhancements focus on limiting vehicle and pedestrian access to the apron areas and aircraft operational areas.

The segregation of vehicle and aircraft operational areas is further supported by new FAA guidance established in June 2002. FAA AC 150/5210-20, *Ground Vehicle Operations on Airports*, states: "The control of vehicular activity on the airside of an airport is of the highest importance." The AC further states: "An airport operator should limit vehicle operations on the movement areas of the airport to only those vehicles necessary to support the operational activity of the airport." The recommended landside plan for Chino Airport has been developed to reduce the need for vehicles to cross an apron or taxiway area. Special attention has been given to ensure public access routes to fixed base operator (FBO) facilities. FBO facilities are focal points

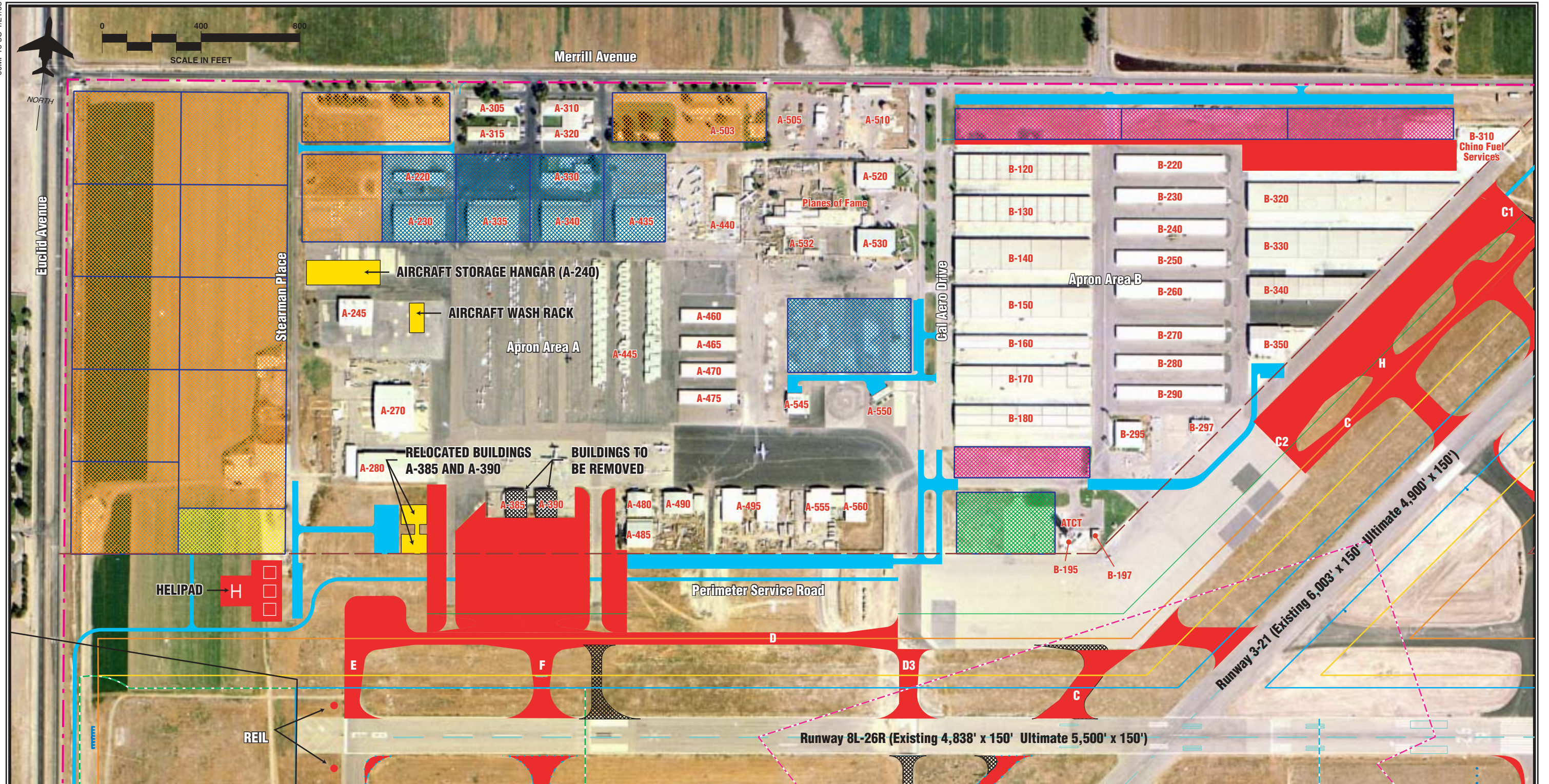
for users who are not familiar with aircraft operations (i.e. delivery vehicles, charter passengers, etc.).

**Exhibit 5C** provides a depiction of the planned landside development north of Runway 8L-26R. Segregated public access improvements are planned in three separate areas of Apron Area A. Segregated access is planned to be extended to Buildings A-545 and A-550 via a new roadway extending west from Cal Aero Drive. Public access to Buildings A-480, A-485, A-490, A-495, A-555, and A-560, is planned by the development of a new roadway and automobile parking area extending along the southern side of these buildings. Roadway access would be via a new road connecting with Cal Aero Drive. This new roadway would cross Taxiway D3 (formerly Taxiway B). Taxiway D3 would be closed.

The closure of Taxiway D3 will focus all ingress and egress to Apron Area A to the west end of the apron. To ensure there are at least two taxiway access points, Buildings A-385 and A-390 are planned to be removed and relocated to the west. This allows for the expansion of the apron adjacent to these buildings, dual taxiway access to Apron A, and more clearance between buildings for taxiing aircraft.

Five commercial general aviation parcels are reserved along Apron A. This includes a new parcel north of Building A-550. Four of these parcels extend over the existing Dome Hangars, which are ultimately planned to be redeveloped as new FBO facilities. These parcels are ideally suited for FBO





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|--|---------------------------------|--|------------------------------|--|-----------------------------------|--|--|
|  | Airport Property Line           |  | Localizer Critical Area      |  | Ultimate Roads/Parking            |  | Public Terminal                        |
|  | Object Free Area (OFA)          |  | Glideslope Critical Area     |  | Pavement/Buildings to be Removed  |  | Aircraft Storage                       |
|  | Runway Safety Area (RSA)        |  | Runway Visibility Zone       |  | Aircraft Parking Limit            |  | Airport Maintenance/Administration     |
|  | Obstacle Free Zone (OFZ)        |  | Runway Protection Zone (RPZ) |  | Lease Parcel                      |  | Aviation-Related Commercial/Industrial |
|  | Building Restriction Line (BRL) |  | Ultimate Airfield Pavement   |  | Commercial/General Aviation (FBO) |  |  |





operations as there is ample apron area adjacent to these parcels.

A helipad with three parking positions is planned northwest of the Runway 8L end. This helipad would be served by an automobile parking area with access from Stearman Drive.

An aircraft wash rack is planned east of Building A-245. The wash rack will be developed by the Chino Airport staff.

An area west of Stearman Drive has been reserved for airport maintenance and administration. This area is located in close proximity to the planned perimeter service road, while also being located along Stearman Drive, which provides easy public access to the parcel.

The area north and west of the airport maintenance/administration parcel is reserved for aviation-related commercial/industrial uses. This could include a wide range of uses including manufacturing, warehouse, office, and retail uses. These parcels would not have airfield access. Roadway access is available via Euclid Avenue for the westerly parcels and Stearman Drive for the easterly parcels.

The area south of Merrill Avenue, between Stearman Drive and Cal Aero Drive, is reserved for aviation-related commercial/industrial use as well. Similar to the parcels west of Stearman Drive, airfield access is not available for these parcels; therefore, the use of this land is reserved for aviation-related businesses without a need for airfield access.

The primary public access point along Apron Area B is Building B-350. The public access plan for Apron B includes developing roadway access from the existing road located north of the airport traffic control tower (ATCT). This road would extend to the east across Taxiway C2 (formerly Taxiway F) before turning north to Building B-350. Taxiway C2 would be closed north of this roadway. A public parking area would be developed near Building B-350 and serve the nearby T-hangars as well.

While this alternative eliminates two taxiway access points for B-120 through B-180 and B-220 through B-290, this alternative retains the most options for ingress and egress than other options considered in the alternatives analysis. Under this plan, taxiway access would be available via the hangar taxilanes between Buildings B-320, B-330, B-340, and B-350. Other roadway alignment options limited taxiway access to only one or two taxiways and required establishing separate vehicle access gates. Currently, all vehicles access the airport through a central access gate.

Aircraft storage parcels are reserved along the northern portion of Apron Area B. These parcels are envisioned for hangars facing south as segregated automobile parking and access is planned along the north side of the building. T-hangars are not planned in this area.

An additional aircraft storage parcel is reserved south of Building B-180. In this parcel, the hangars would face the north and be served by automobile parking and access on the south side of the hangars.

This master plan reserves the area west of the ATCT for the ultimate development of a public terminal building. Apron expansion is planned between Taxiways C1 and C2.

The area northeast of Runway 3-21 is reserved for aviation-related commercial and industrial uses. Since this portion of the airport is not located directly along a primary parallel taxiway, this area is best reserved for aviation-related uses with low levels of activity or no need for airfield access. A series of parcels have been established with roadway access from Merrill Avenue. Limited taxiway access is planned to be developed by extending Taxiway M to the northeast and Taxiway D to the east. The configuration of this area of the airport was previously shown on **Exhibit 5A**.

**Exhibit 5D** depicts planned landside improvements in the southwest quadrant of the airport. This plan for this portion of the airport includes a large apron area east of Runway 3-21, south of Taxiway A, to support FBO development. An apron area is best developed in this area, as this area is located approximately along the midpoint of Runway 8R-26L for high visibility for transient users seeking FBO facilities. This apron area would be served by a segregated helipad. A joint-use regional structural firefighting and airport rescue and firefighting facility is shown for development along Kimball Avenue. Airfield access for the firefighting facility would be via Taxiway M.

The area west of Runway 3-21 is reserved for the development of aircraft

storage hangars. This facility layout provides for segregated vehicular and aircraft access through the development of a series of hangars with airfield access on one side and roadway access on the other side. These parcels would be served by dual access taxilanes, which would limit the potential for congestion at the airfield access point.

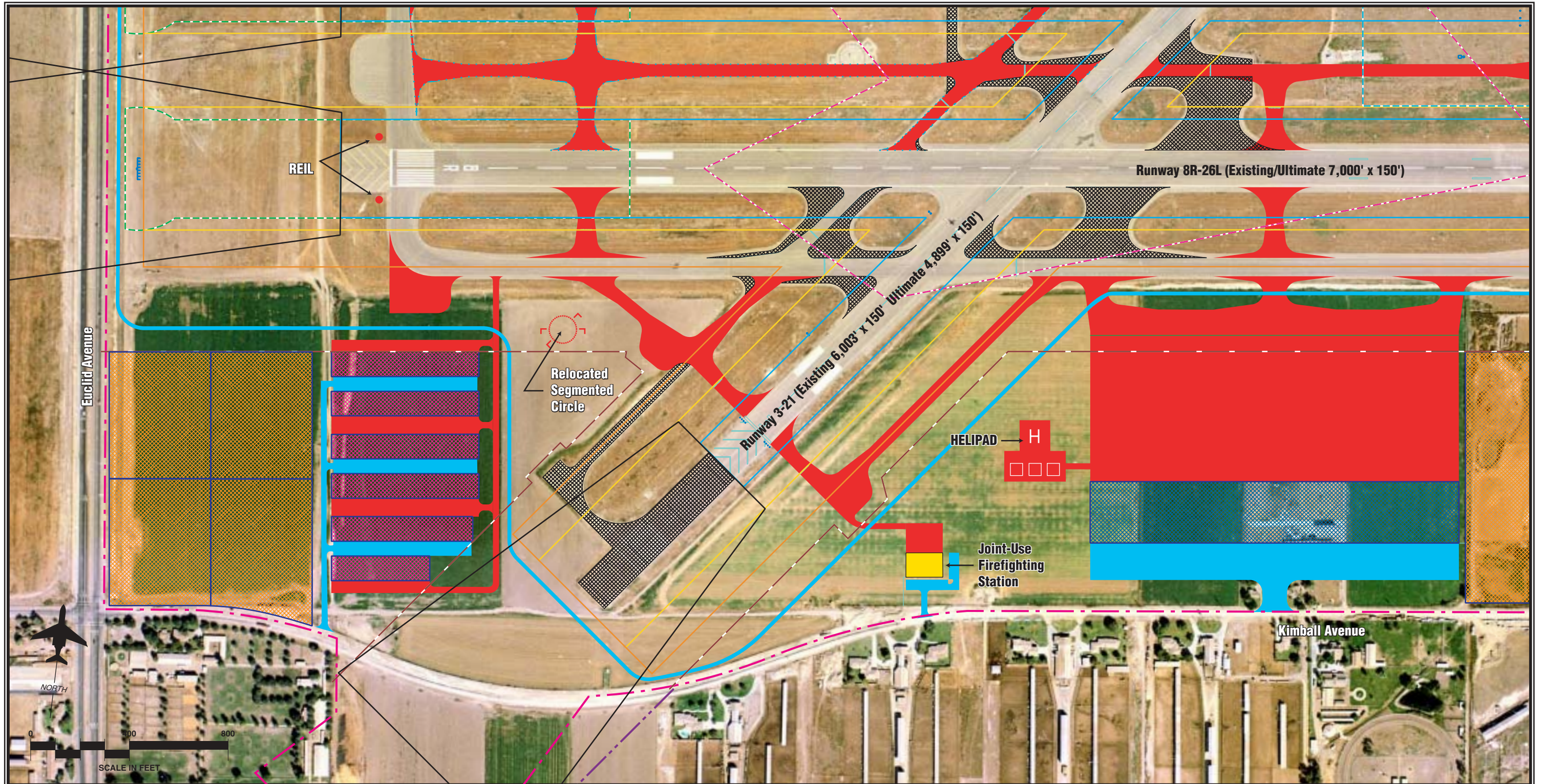
The planned landside improvements in the southeast quadrant of the airport were previously shown on **Exhibit 5A**. Apron Area F is planned to be expanded to the west to support aviation-related commercial and industrial uses with a need for airfield access. Public access for these parcels would be via Grove Avenue. The east side of Apron Area F is planned to support aircraft storage hangar development. This area of the airport is not directly located along a primary taxiway; therefore, this area can only support land uses with low levels of activity. A consolidated fuel farm is reserved along an improved Walker Avenue. The fuel farm would be connected to the perimeter service road to support aircraft refueling truck access.

## ***NOISE EXPOSURE ANALYSIS***

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding community. If the sound is sufficiently loud or frequent in occurrence, it may interfere with various activities or otherwise be considered objectionable.

To determine the noise related impacts that the proposed development could





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|--|---------------------------------|--|------------------------------|--|----------------------------------|--|--|
|  | Airport Property Line           |  | Localizer Critical Area      |  | Ultimate Roads/Parking           |  | Commercial/General Aviation (FBO)      |
|  | Object Free Area (OFA)          |  | Glideslope Critical Area     |  | Pavement/Buildings to be Removed |  | Aircraft Storage                       |
|  | Runway Safety Area (RSA)        |  | Runway Visibility Zone       |  | Aircraft Parking Limit           |  | Aviation-Related Commercial/Industrial |
|  | Obstacle Free Zone (OFZ)        |  | Runway Protection Zone (RPZ) |  | Lease Parcel                     |  |  |
|  | Building Restriction Line (BRL) |  | Ultimate Airfield Pavement   |  | Ultimate Property Line           |  |  |





have on the environment surrounding Chino Airport, noise exposure patterns were analyzed for both existing airport activity conditions and projected long term activity conditions.

The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise predication. The Community Noise Exposure Level (CNEL) was used in this study to assess aircraft noise.

CNEL is defined as the average A-weighted sound level as measured in decibels (dB) during a 24-hour period. A 5dB penalty applies to noise events occurring in the evening (7:00 p.m. to 10:00 p.m.), while a 10 dB penalty applies to noise events occurring at night (10:00 p.m. to 7:00 a.m.). CNEL is a summation metric which allows objective analysis and can describe noise exposure comprehensively over a large area. The 65 CNEL contour has been established as the threshold of incompatibility, meaning that noise levels below 65 CNEL are considered compatible with underlying land uses.

Since noise decreases at a constant rate in all directions from a source, points of equal CNEL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. CNEL calcula-

tions do not precisely define noise impacts. Nevertheless, CNEL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations, and building codes.

The noise contours for Chino Airport have been developed from the Integrated Noise Model (INM), Version 6.0. The INM was developed by the Transportation Systems Center of the U.S. Department of Transportation at Cambridge, Massachusetts, and has been specified by the FAA as one of the two models acceptable for federally-funded noise analysis.

The INM is a computer model which accounts for each aircraft along flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the data base of the INM which relate to noise, distances, and engine thrust for each make and model of aircraft type selected.

Computer input files for the noise analysis assumed implementation of the proposed airfield plan. The input files contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. The operational data and aircraft fleet mix are summarized in **Table 5B**.



| <b>TABLE 5B</b><br><b>Aircraft Forecast Summary</b> |                          |                  |
|---|--------------------------|------------------|
|   | <b>Annual Operations</b> |                  |
| <b>Type of Operation</b>                            | <b>Existing (2001)</b>   | <b>Long Term</b> |
| <b>Itinerant Operations</b>                         |                          |                  |
| Single-Engine Piston                                | 58,259                   | 98,712           |
| Multi-Engine Piston                                 | 15,050                   | 24,267           |
| Turboprop   | 2,832                    | 6,855            |
| Business Jet  | 2,427                    | 4,113            |
| Helicopter  | <u>2,347</u>             | <u>3,153</u>     |
| Total Itinerant Operations                          | 80,915                   | 137,100          |
| <b>Local Operations</b>                             |                          |                  |
| Single-Engine Piston                                | 47,786                   | 53,791           |
| Multi-Engine Piston                                 | 9,945                    | 10,845           |
| Turboprop   | 323                      | 362              |
| Jet   | 65                       | 72               |
| Helicopter  | <u>6,458</u>             | <u>7,230</u>     |
| Total Local Operations                              | 64,576                   | 72,300           |
| <b>Total Operations</b>                             | <b>145,491</b>           | <b>209,400</b>   |

Basic assumptions used as input to the INM are presented in **Tables 5C and 5D**. The runway use percentages and day/night split were assumed to remain constant over the planning period.

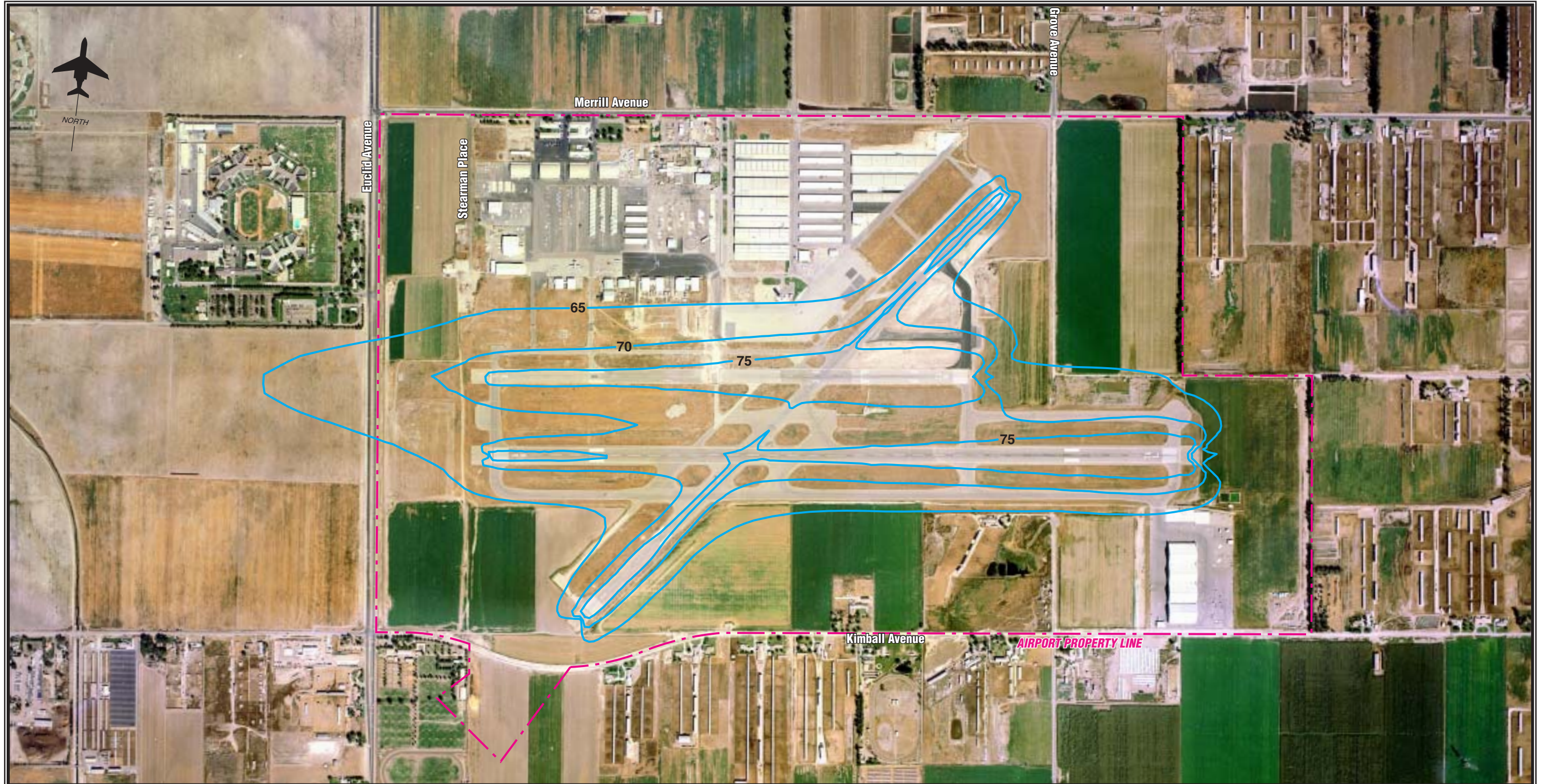
| <b>TABLE 5C</b><br><b>Noise Contour Input Data:</b><br><b>Percent Day, Evening, and Night</b> |                        |                      |
|---|------------------------|----------------------|
| <b>Percent Day</b>  | <b>Percent Evening</b> | <b>Percent Night</b> |
| 90%   | 5%                     | 5%                   |

| <b>TABLE 5D</b><br><b>Noise Model Input: Runway Use Percentages</b> |           |            |           |            |          |           |
|---|-----------|------------|-----------|------------|----------|-----------|
| <b>Aircraft</b>   | <b>8L</b> | <b>26R</b> | <b>8R</b> | <b>26L</b> | <b>3</b> | <b>21</b> |
| Single Engine Piston  | 2.50%     | 60.00%     | 2.50%     | 25.00%     | 7.50%    | 2.50%     |
| Multi-Engine Piston   | 2.50%     | 60.00%     | 2.50%     | 25.00%     | 7.50%    | 2.50%     |
| Turboprop   | 2.50%     | 60.00%     | 2.50%     | 25.00%     | 7.50%    | 2.50%     |
| Business Jets   | 2.50%     | 40.00%     | 2.50%     | 50.00%     | 2.50%    | 2.50%     |



The aircraft noise contours generated using the aforementioned data for Chino Airport are depicted on **Exhibit 5E, Existing Noise Exposure** and **Exhibit 5F, Long Term Noise Exposure**. As shown on both exhibits, the 65 CNEL noise contour is expected

to remain almost entirely within the existing airport property line when considering both existing and forecast activity at the airport. A small portion of the 65 CNEL contour extends beyond the western airport boundary onto land owned by the State of California, which



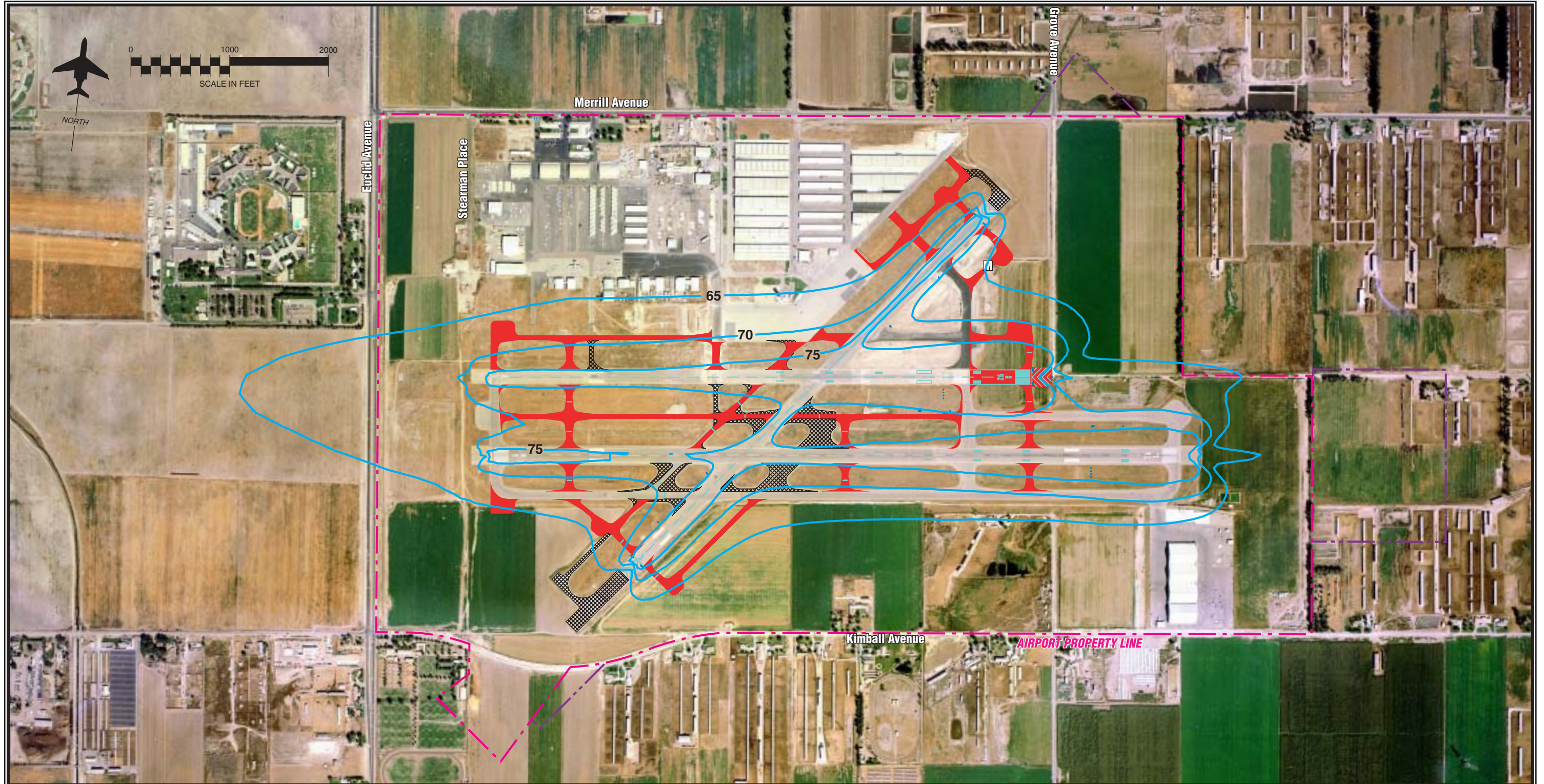


**LEGEND**

-  Airport Property Line
-  CNEL (Community Noise Exposure Level) Contour







**LEGEND**

- - - Airport Property Line
- - - Ultimate Property Line
- CNEL (Community Noise Exposure Level) Contour
- Ultimate Pavement
- Pavement to be Removed





is currently undeveloped. An aviation easement should be secured for the area within the long term 65 CNEL contour, to ensure incompatible land uses are not developed in the 65 CNEL contour.

## ***ENVIRONMENTAL EVALUATION***

The protection and preservation of the local environment are essential concerns in the master planning process. Now that a program for the use and development of Chino Airport has been proposed, it is necessary to review environmental issues to ensure that the program can be implemented in compliance with applicable environmental regulations, standards, and guidelines.

All of the improvements planned for Chino Airport, as depicted on the Airport Layout Plan (ALP), will require compliance with the *National Environmental Policy Act (NEPA) of 1969*, as amended. While many of the improvements will be categorically excluded and will not require NEPA documentation, the proposed runway extension may require the preparation of a NEPA document. The FAA categorically excludes all runway extensions that are not considered a major runway extension. A major runway extension is defined by an increase in 1.5 CNEL or greater over any noise-sensitive areas located within the 65 CNEL contour. As shown by our noise analysis, the 65 CNEL contour remains on airport property and does not impact noise-sensitive land uses. Therefore, using noise as the only criterion, the proposed runway

extension would not be considered a major runway extension. A runway extension could be considered a major runway extension if it impacted any of the remaining environmental categories such as wetlands, floodplains, etc. With the information available during the preparation of the Environmental Evaluation, a determination could not be definitively made if the other environmental categories would be impacted. Therefore, it was not known if the proposed runway extension would be considered a major runway extension. To determine if the proposed extension would be considered a major runway extension, an Environmental Checklist will need to be prepared to determine the impacts (if any) on the remaining environmental categories. If there are none, then the project will be categorically excluded. If there are impacts, then a more detailed document (i.e., an Environmental Assessment) will need to be prepared to determine mitigation. The decision on the level of environmental review and documentation is the purview of the FAA and cannot be made during the master plan process. This decision would be made closer to implementation.

Compliance with the provisions of NEPA for projects within the Master Plan will be required prior to project development and is outside the scope of this master plan. As detailed in FAA Order 5050.4A, *Airport Environmental Handbook*, compliance with NEPA is generally satisfied with the preparation of an Environmental Assessment (EA). In cases where a categorical exclusion is issued, environmental issues such as wetlands, threatened or endangered



species, and cultural resources are further evaluated during the federal, state, and/or local permitting processes.

In addition, because the airport is located in California, compliance with the *California Environmental Quality Act* (CEQA) is also necessary. CEQA requires consideration of the environmental impacts of the entire improvement program prior to local adoption of the master plan. CEQA compliance is initially determined by the preparation of an Initial Study, which is being prepared separately.

This section of the master plan is not intended to satisfy NEPA's requirements for an EA; rather, it is intended only to supply a preliminary review of environmental issues that would need to be analyzed in more detail within NEPA or permitting processes. Conse-

quently, this analysis *does not* address mitigation or the resolution of environmental issues. The following pages consider the environmental resources as outlined in FAA Order 5050.4A.

A review of environmental impact reports prepared for the City of Ontario and City of Chino land use plans and information received through agency coordination contributed to this analysis. The relevant reference documents included the 1988 *Environmental Impact Report for the Chino Master Plan Update and General Plan Amendment*, 2001 *Chino Sphere of Influence- Subarea 2, Draft Environmental Impact Report*, and 1997 *City of Ontario Sphere of Influence Environmental Impact Report*. **Table 5E** summarizes the results of this evaluation.

**TABLE 5E****Summary of Environmental Resources Potentially Impacted by the Proposed Improvements**

| <b>Environmental Resource</b>   | <b>Anticipated Impacts</b>   |
|---|--|
| <p><b>Noise.</b> The Community Noise Exposure Level (CNEL) is used in this study to assess aircraft noise. In California, CNEL is the metric currently accepted by the Federal Aviation Administration (FAA) as an appropriate measure of cumulative noise exposure.</p>  | <ul style="list-style-type: none"><li>• As depicted on <b>Exhibits 5E</b> and <b>5F</b>, the proposed improvements will not result in any impacts to noise-sensitive development near the airport. The noise contours are located almost entirely on airport property, with only a portion of the 65 CNEL contour extending over an undeveloped portion of institutional land use to the west. An aviation easement may be considered for this area to prevent incompatible development within the 65 CNEL.</li><li>• It is not likely that further noise analysis will be required under NEPA, since no sensitive institutions or development are impacted by noise in excess of 65 CNEL.</li></ul> |
| <p><b>Compatible Land Use.</b> FAR Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure. In addition, Advisory Circular 150/5200-33 identifies land uses that are incompatible with safe airport operations because of their propensity for attracting birds or other wildlife, which in turn results in an increased risk of aircraft strikes and damage. Finally, FAR Part 77 regulates the height of structures within the vicinity of the airport.</p> | <ul style="list-style-type: none"><li>• Implementation of the proposed runway extension does not result in additional noise impacts on noise-sensitive development.</li><li>• The proposed airport improvements will not provide wildlife attractants, nor will any development affect the airport's Part 77 surfaces.</li></ul>   |

**TABLE 5E (Continued)****Summary of Environmental Resources Potentially Impacted by the Proposed Improvements**

| Environmental Resource  | Anticipated Impacts   |
|---|---|
| <b>Social Impacts.</b> These impacts are often associated with the relocation of residents or businesses or other community disruptions.  | <ul style="list-style-type: none"><li>• The master plan includes the fee simple acquisition of approximately 65 acres of land to meet standards. Compliance with the <i>Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970</i> (URAUPAPA) will be required at acquisition. FAA Order 50.50.4A provides that where the relocation or purchase of a residence, business, or farmland is involved, the provisions of the URAUPAPA must be met. The Act requires that landowners, whose property is to be purchased, be compensated fair market value for their property.</li><li>• The proposed development and associated land acquisition are not anticipated to divide or disrupt an established community, interfere with orderly planned development, or create a short-term, appreciable change in employment.</li></ul> |
| <b>Induced Socioeconomic Impacts.</b> These impacts address those secondary impacts to surrounding communities resulting from the proposed development, including shifts in patterns of population growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development. | <ul style="list-style-type: none"><li>• Significant shifts in patterns of population movement or growth, or public service demands are not anticipated as a result of the proposed development. It could be expected, however, that the proposed development would potentially induce positive socioeconomic impacts for the community over a period of years. The airport, with expanded facilities and services, would be expected to attract additional users. It is also expected to encourage tourism, industry, and trade and to enhance the future growth and expansion of the community's economic base. Future socioeconomic impacts resulting from the proposed development would be primarily positive in nature.</li></ul>  |

**TABLE 5E (Continued)****Summary of Environmental Resources Potentially Impacted by the Proposed Improvements**

| Environmental Resource  | Anticipated Impacts   |
|---|---|
| <p><b>Air Quality.</b> The US Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O<sub>3</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxide (NO), Particulate matter (PM<sub>10</sub>), and Lead (Pb). Various levels of review apply within both NEPA and permitting requirements.</p> | <ul style="list-style-type: none"> <li>Chino Airport is located in San Bernardino County, which is listed as a non-attainment area for ozone, carbon monoxide, nitrogen dioxide, and particulate matter. It is likely that an air quality analysis will be required during the NEPA process for the runway extension. Coordination with the regional air quality board will be necessary.</li> </ul>  |
| <p><b>Water Quality.</b> Water quality concerns associated with airport expansion most often relate to domestic sewage disposal, increased surface runoff and soil erosion, and the storage and handling of fuel, petroleum, solvents, etc.</p>   | <ul style="list-style-type: none"> <li>The airport will need to continue to comply with their current National Pollutant Discharge Elimination System (NPDES) operations permit requirements.</li> <li>With regard to construction activities, the airport and all applicable contractors will need to comply with the requirements and procedures of the construction-related NPDES General Permit, including the preparation of a <i>Notice of Intent</i> and a <i>Stormwater Pollution Prevention Plan</i>, prior to the initiation of project construction activities.</li> </ul> |
| <p><b>Section 4(f) Lands.</b> These include publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or any land from a historic site of national, state, or local significance.</p>  | <ul style="list-style-type: none"> <li>No impacts anticipated, as there are no section 4(f) lands in the area proposed for development.</li> </ul>  |
| <p><b>Historical and Cultural Resources</b></p>   | <ul style="list-style-type: none"> <li>A review of the previous survey shows no evidence of prehistoric use or any known fossil localities for the project area. However, some buildings on airport property were built during World War II. Additional coordination is necessary to determine if these buildings have any historical significance.</li> <li>Further coordination with the California Historical Resources Information System is needed to determine potential impacts.</li> </ul>  |



**TABLE 5E (Continued)****Summary of Environmental Resources Potentially Impacted by the Proposed Improvements**

| <b>Environmental Resource</b>                                    | <b>Anticipated Impacts</b>  |
|--|---|
| <b>Threatened or Endangered Species and Biological Resources</b> | <ul style="list-style-type: none"><li>No impacts anticipated. A review of the <i>2001 Draft Environmental Impact Report</i> prepared for <i>The Preserve - Chino Sphere of Influence- Subarea 2</i> indicates that the area around the airport does not support the habitat suitable for the protected species in this area.</li></ul>  |
| <b>Waters of the U.S. Including Wetlands</b>                     | <ul style="list-style-type: none"><li>No impacts anticipated. A review of wetland maps for the area does not indicate any wetlands or waters of the U.S. within the project area.</li></ul>   |
| <b>Floodplains</b>   | <ul style="list-style-type: none"><li>Chino Airport is not located within a 100-year floodplain. The floodplains around the airport were not impacted by the development of 7 Oaks Dam.</li></ul>   |
| <b>Wild and Scenic Rivers</b>                                    | <ul style="list-style-type: none"><li>No impacts. The airport is not near any designated wild and scenic rivers.</li></ul>  |
| <b>Farmland</b>  | <ul style="list-style-type: none"><li>The lands identified for fee simple acquisition contain prime farmland, and are subject to Williamson Act contracts. However, The Chino General Plan for the area commits these parcels to urban development; therefore, this area does not fall under <i>The Farmland Protection Policy Act</i> and further coordination is not likely required.</li></ul> |
| <b>Energy Supply and Natural Resources</b>                       | <ul style="list-style-type: none"><li>No significant impacts anticipated. The proposed improvements will not have a measurable effect on local energy supplies or natural resources.</li></ul>  |
| <b>Light Emissions</b>   | <ul style="list-style-type: none"><li>No significant impacts anticipated. Proposed light installations are not expected to shine directly into people's homes or create annoyance to people in the vicinity of the airport as the new lighting aids can be shielded.</li></ul>  |
| <b>Solid Waste</b>   | <ul style="list-style-type: none"><li>No significant impacts anticipated.</li></ul>   |

## ***SUMMARY***

The master plan for Chino Airport has been developed in cooperation with the planning advisory committee, interested citizens, and San Bernardino County. It is designed to assist the County in making decisions relative to the future use of Chino Airport as it is maintained until such a time as it can be replaced by a facility suitable to meet the long term air transportation needs for the County.

Flexibility will be a key to the plan since activity may not occur exactly as forecast. The master plan provides San Bernardino County with options to pursue in marketing the assets of the airport for community development. Following the general recommendations of the plan, the airport can maintain its viability and continue to provide air transportation services to the region.